



# Knowledge, Attitude and Awareness Among Dental Practitioners on Herpetic Neuritis

Aparna.M<sup>1</sup>

Dhanraj. M<sup>2\*</sup>

Subhashree.R<sup>3</sup>

Journal for Educators, Teachers and Trainers, Vol. 13 (6)

<https://jett.labosfor.com/>

Date of reception: 11 Oct 2022

Date of revision: 10 Nov 2022

Date of acceptance: 27 Dec 2022

**Aparna.M, Dhanraj. M, Subhashree.R (2022). Knowledge, Attitude and Awareness Among Dental Practitioners on Herpetic Neuritis *Journal for Educators, Teachers and Trainers*, Vol. 13(6). 01-10.**

---

<sup>1</sup>Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, India .

<sup>2</sup>Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, India .

<sup>3</sup>Senior Lecturer, Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai, India



## **Knowledge, Attitude and Awareness Among Dental Practitioners on Herpetic Neuritis**

**Aparna.M<sup>1</sup>, Dhanraj. M<sup>2\*</sup>, Subhashree.R<sup>3</sup>**

<sup>1</sup>Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, India .

<sup>2</sup>Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai, India .

<sup>3</sup>Senior Lecturer, Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Science, Saveetha University, Chennai, India

\*Corresponding Author

Email: 151501019.sdc@saveetha.com<sup>1</sup>, dhanraj@saveetha.com<sup>2</sup>, subhashreer.sdc@saveetha.com<sup>3</sup>

### **ABSTRACT**

Herpetic neuritis is a painful condition that affects the nerve fibers and skin. It is a complication of shingles. It is the reemergence of the varicella zoster virus, or chickenpox virus, which has been dormant in the sensory dorsal root ganglia of the nervous system since childhood infection. These viral infections which occur in the oral mucosa are frequently encountered in general practice. The clinical diagnosis of these lesions can sometimes be confusing due to their similar clinical presentations. Therefore the main aim of this study is to determine the knowledge, awareness and management practices of herpetic neuritis in a dental clinical setup among dental practitioners. To analyse the awareness of herpetic neuritis among dental practitioners. This study was conducted as an online survey based on the awareness of herpetic neuritis among dental practitioners with the help of a survey planet . A Total of 100 dental practitioners were randomly enrolled in the study and voluntarily completed a questionnaire consisting of 10 close – ended questions data was collected and analysed. The results were demonstrated in the form of pie charts. About 96% of the participants were aware about the various diagnostic aids and management practices of herpetic neuritis patients and they have an overview upon the ways to implement them in their clinical practice. The knowledge and awareness among dentists about herpetic neuritis patients in a clinical setup is adequate and some of dentists had a negative attitude towards the management practices.

**Keywords:** Dental practitioners, Herpetic neuritis, Herpes zoster, Lesions, Shingles.

### **INTRODUCTION**

Herpetic neuritis is one of the most painful, acute and chronic conditions to afflict mankind. It is a major health problem and is at risk for the reemergence of the varicella zoster virus. (Johnson, 2010). The impact of the chickenpox vaccine has yet to be known on the ultimate expression of this disease. As it is well known that, acute herpes zoster neuritis is the reemergence of the varicella zoster virus, or chickenpox virus, which has been dormant in the sensory dorsal root ganglia of the nervous system since childhood infection (Betts, 2007). Herpes zoster is a disease of the elderly as an expression of the loss of immune surveillance related to aging. With the decline in cell-mediated immunity, the virus awakens in the dorsal root ganglion and causes an intense inflammatory response with a ganglionitis (Nalamachu and Morley-Forster, 2012). The virus eventually reaches the sensory root and travels through the nerve, eventually reaching the skin in one or, occasionally, two dermatomes and with the development of the typical blistering rash and vesicles so that the diagnosis is self-evident.

The disease is certainly more common in patients with immune deficiency such as AIDS, lymphoma, leukemias, high dose corticosteroids, or immunosuppression from cancer therapy. Usually once the virus has reawakened, the immune response contains it to one or two dermatomes and, if there is widespread dissemination, it suggests a significant defect in immune function. Many clinicians feel that the presence of herpes zoster in the younger population warrants an investigation for an occult malignancy or other problems with cell-mediated immunity. (Sampathkumar, Drage and Martin, 2009). The most common complication is postherpetic neuralgia, which is persistent neuropathic pain after the eruption is healed and usually occurs in about 3 to 4 weeks.

Various treatment methods for herpes zoster include corticosteroids, opioids, antiviral agents, smallpox vaccination, topical local anaesthetics and capsaicin and even iontophoresis vincristine. In acute phase of herpes

zoster neuritis it seems to have a significant sympathetically-mediated component and the development of postherpetic neuralgia represents the evolution of this condition to a sympathetically-independent neuropathic condition that can be very resistant to treatment. This resistance to successful management is certainly represented in the high incidence of suicide. There are some early studies suggesting that aggressive treatment of the acute pain with analgesics, including opioids, may decrease the percentage of patients with postherpetic neuralgia. With the development of antiviral medications such as acyclovir, famciclovir, etc it was hoped that there would be a significant reduction in the percentage of patients with herpetic neuritis(Jeon, 2015).

These viral infections which occur in the oral mucosa are frequently encountered in general practice. The clinical diagnosis of these lesions can sometimes be confusing due to their similar clinical presentations. However, a general dentist is called upon to provide follow up in terms of management of the patient's subsequent oral health. As herpetic neuritis is related to various oral health problems it is important to have knowledge on herpetic neuritis. Our team has extensive knowledge and research experience that has translated into high quality publications (Choudhari and Thenmozhi, 2016; Govindaraju, Jeevanandan and Subramanian, 2017; Ravi *et al.*, 2017; Vikram *et al.*, 2017; Gupta, Ariga and Deogade, 2018; Hannah *et al.*, 2018; Kavarthapu and Thamaraiselvan, 2018; Pandian, Krishnan and Kumar, 2018; Ramamurthy and Mg, 2018; Ashok and Ganapathy, 2019; Ramesh *et al.*, 2019; Sharma *et al.*, 2019; Venu, Raju and Subramani, 2019; Wu *et al.*, 2019; Samuel, Acharya and Rao, 2020)

this vast research experience has inspired us to research about the knowledge, attitude and awareness of herpetic neuritis among dental practitioners.

## **MATERIALS AND METHODS**

### **Study design**

This study was conducted as an online survey based on the awareness of herpetic neuritis among dental practitioners with the help of a survey planet. The study was conducted during January 2020, among dental practitioners in Chennai . The questionnaire was pre-tested, revised and retested before use.

### **Inclusion and exclusion criteria**

Both male and female dental practitioners were included in the study. Incomplete data were excluded from the study.

### **Data collection**

A Total of 100 dental practitioners were randomly enrolled in the study and voluntarily completed a questionnaire consisting of 10 close – ended questions. Questionnaire data consist of questions based on demographic characteristics, knowledge on risk factors , causes , signs and symptoms ,various diagnostic aids, management of herpetic neuritis etc. Questionnaire data was gathered by sharing survey planet links to the selected population. Data was entered in Microsoft excel sheets and was statistically analysed .

### **Data analysis**

Questionnaire data was entered in Microsoft excel sheets and analysed. Pie charts were plotted and the accuracy of input data was verified. No discrepancies were found in the data. Incomplete data were excluded from the study.

## **RESULTS AND DISCUSSION**

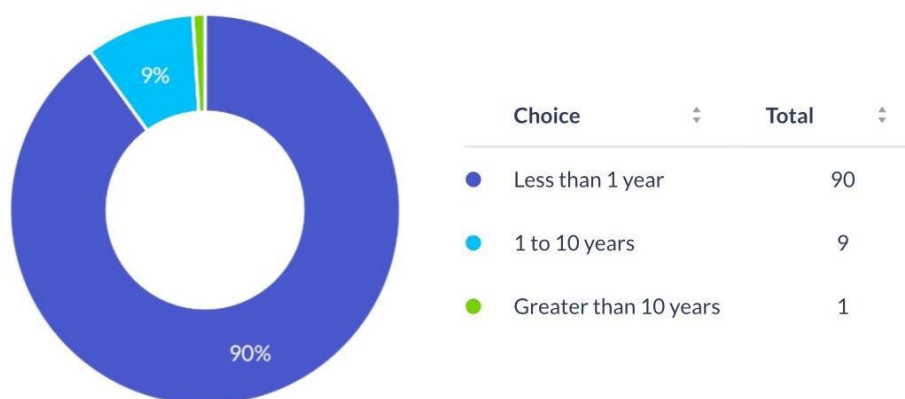
Herpetic neuritis is defined as the inflammation with occurrence of chronic, persistent, debilitating pain with dermatomal distribution in patients who have recovered from shingles. The pain associated with this condition may be described as aching, itchy, lancinating, or sharp. Additionally, patients with postherpetic neuralgia frequently experience allodynia, hyperalgesia, areas of anaesthesia, and deficits in thermal, tactile, pinprick, or vibration sensations within or extending beyond the margins of the affected dermatomes. Generally, the risk of developing persistent severe pain is fairly low among primary care patients who have recovered from a herpes zoster infection.(Arvin, 2005). Herpes zoster is a disease of the elderly as an expression of the loss of immune surveillance related to aging. (Gauthier *et al.*, 2009),(Chernev and Dado, 2013). With the decline in cell-mediated immunity, the virus awakens in the dorsal root ganglion and causes an intense inflammatory response with ganglionitis. The well-defined risk factors for herpetic neuritis in patients include older age, the presence of prodromal pain, the extent and severity of rash, and the severity of acute herpes zoster pain.(Coen *et al.*, 2006). Other less replicated risk factors for PHN include female gender, location in the ophthalmic branch of the trigeminal nerve, greater neurosensory disturbance, and psychosocial distress was given by Jung et al(Jung *et al.*, 2004).

Among 100 dental students , 48 males and 52 females filled the questionnaire . Most of them 90% of them had 1 year of experience in dental practice (figure -1). About 39.4% of the population had treated patients with herpetic neuritis(figure -2).Almost the whole population who attended the survey were aware of patients who

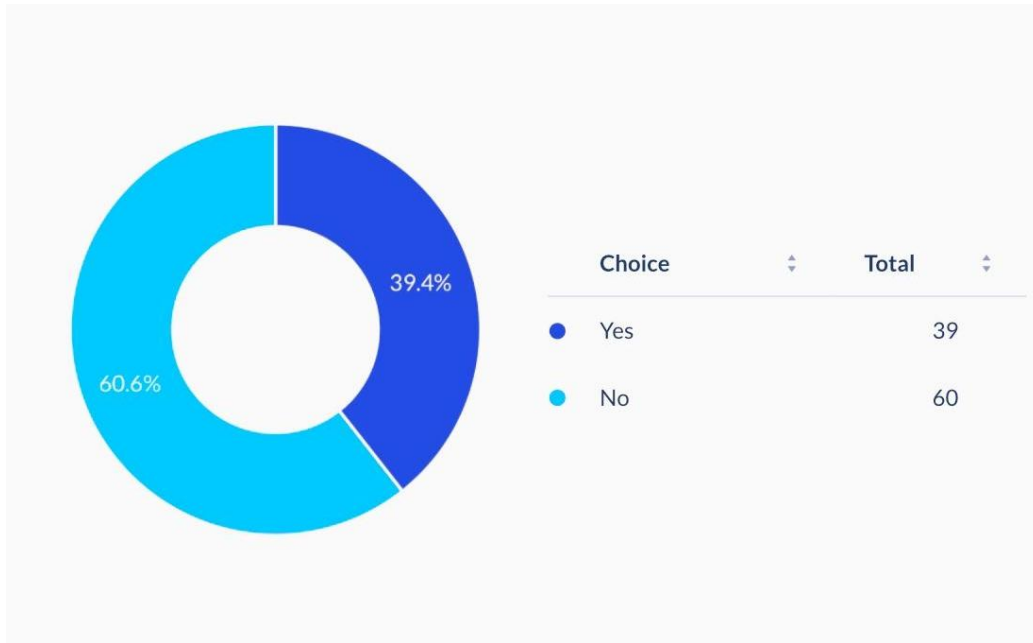
are frequently affected by herpetic neuritis (figure -3). Around 99% of the dental practitioners are aware of symptoms of herpetic neuritis (figure -4). Almost all the dental practitioners attended the survey are aware of the various risk factors of herpetic neuritis and its most important and common diagnostic factor (figure -5,6). About 91.1% of the population are aware of the primary prevention of herpetic neuritis (figure -7). About 88% of the population are aware of secondary prevention of herpetic neuritis (figure -8). Almost all of them are aware of nortriptyline which is used as the most common tricyclic antidepressant medications to reduce the pain caused due to herpetic neuritis (figure -9). Almost 99% of the people think that awareness on herpetic neuritis is important for dental practitioners (figure -10).

Around 99% of the dental practitioners are aware of symptoms of herpetic neuritis. Almost all the dental practitioners attended the survey are aware of the various risk factors of herpetic neuritis and its most important and common diagnostic factor. Diagnostic laboratory tests for HZ include polymerase chain reaction (PCR) assay, skin biopsy, immunofluorescence assay, and viral isolation. These tests are useful for patients with atypical lesions such as herpes simplex, as well as those with contact dermatitis and rash. But the results of these tests differ in terms of sensitivity, specificity, and time to obtain samples. Therefore, these tests have limitations for application in the clinical management of HZ (Volpi *et al.*, 2008).

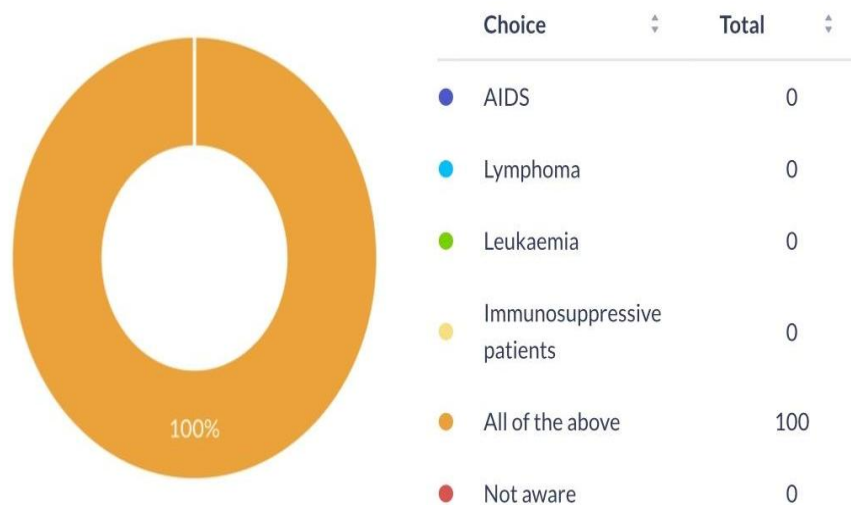
The primary goals of management of herpes zoster are to inhibit ongoing viral replication, alleviate pain, and prevent complications such as herpetic neuritis. Treatments for HZ include antiviral agents, analgesics, corticosteroids, and neural blockade. Herpetic neuritis is a type of chronic neuropathic pain. Therefore, although NSAIDs or acetaminophen are not effective, agents for the treatment of neuropathic pain are generally useful for the treatment of herpetic neuritis. However, herpetic neuritis is often resistant to the current pharmacologic treatments. A multimodal analgesic treatment strategy should be provided to balance the efficacy and tolerability of the medication regimen. Tricyclic antidepressants (TCAs) such as tertiary amines (amitriptyline) and the secondary amines (nortriptyline and desipramine) have shown efficacy in decreasing the chronic pain of herpetic neuritis and should be considered in patients when conventional analgesic therapy is not effective to control pain from HZ as given by Hempenstall *et al.* (Hempenstall *et al.*, 2005). Almost all of them are aware of nortriptyline which is used as the most common tricyclic antidepressant medications to reduce the pain caused due to herpetic neuritis. Zostavax against shingles, This vaccine is a more potent version of the chickenpox vaccine, and evidence shows that it reduces the incidence of herpetic neuritis. (Watson and Gershon, 2001), (Arani *et al.*, 2001). The CDC recommends use of this vaccine in all persons over 60 years old. These findings suggest that vaccination against VZV can be the first line for the prevention of Herpetic neuritis as given by Oxman *et al.* (Oxman *et al.*, 2005). About 91.1% of the population are aware of the primary prevention of herpetic neuritis. About 88% of the population are aware of secondary prevention of herpetic neuritis. Almost the whole population think that awareness of herpetic neuritis is important for dental practitioners.



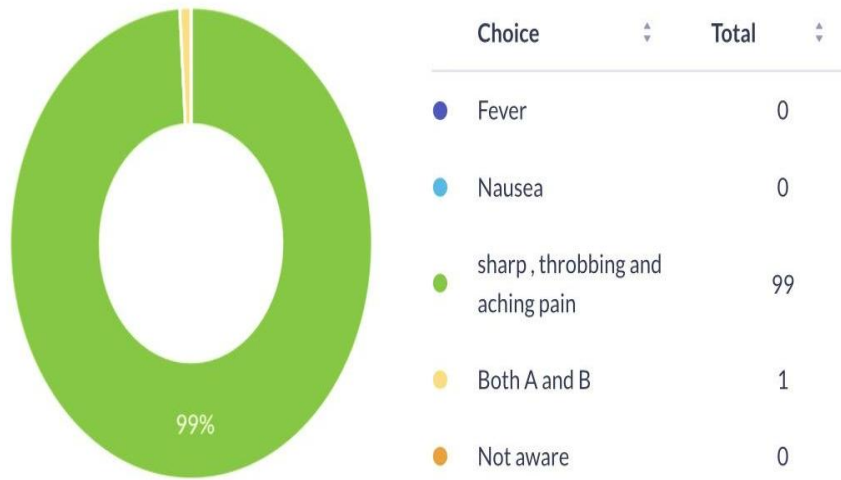
**Figure 1 : Pie chart depicts the practitioners response for their experience in dental practice .90% of them had less than 1 year of experience (purple), 9% had experience ranging for about 1 to 10 years (blue) and 1 % of the respondents had greater than 10 years of experience (green).**



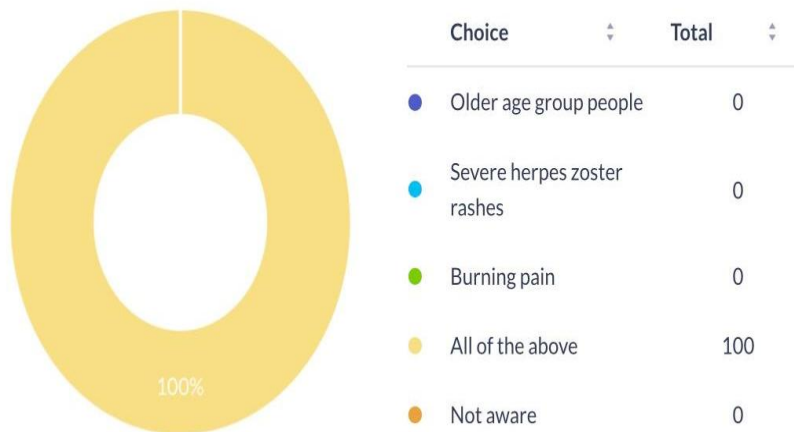
**Figure 2 :** Pie chart depicts the practitioners response for the question that whether they had treated patients with herpetic neuritis.60.6% of them had treated patients with herpetic neuritis (dark blue) and 39.4% had not treated such patients (light blue).



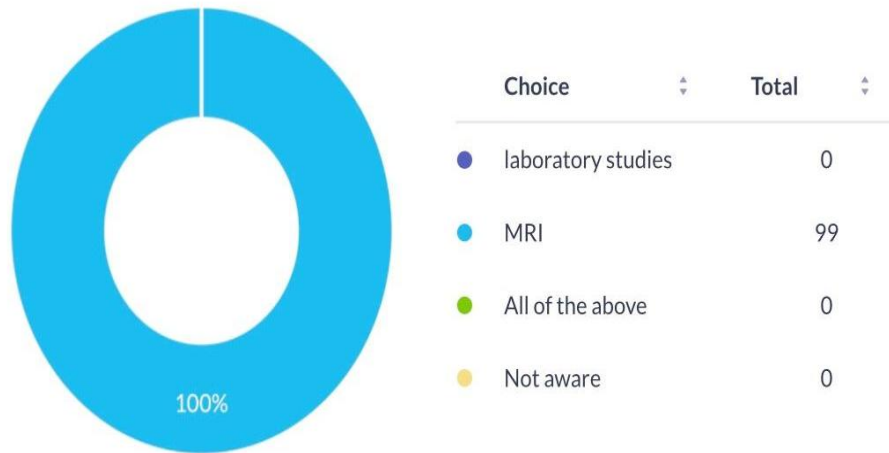
**Figure 3 :** Pie chart depicts the practitioners response for the question whether they know in which patients herpetic neuritis is more common . All of the above (orange) given diseases are common among patients with herpetic neuritis was the response of all the participants.[AIDS (Purple), Lymphoma(blue), leukemia(green), immunosuppressive patients(yellow)] and no one has responded not aware(red).



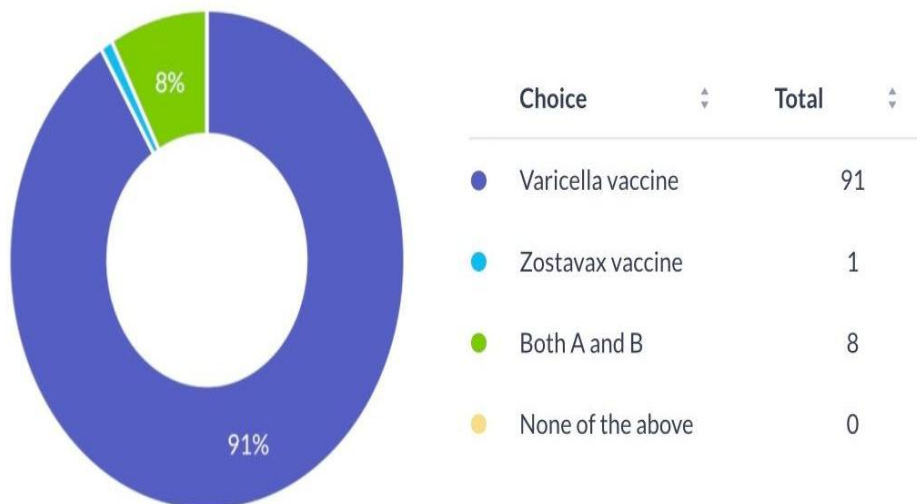
**Figure 4 : Pie chart depicts the practitioners response for the question whether they are aware of symptoms of herpetic neuritis[fever(purple),nausea(blue),sharp, throbbing and aching pain(green)]. Sharp, throbbing and aching pain was the response given by the 99% of the respondents and 1% of them responded both fever and pain and no one has responded not aware(orange).**



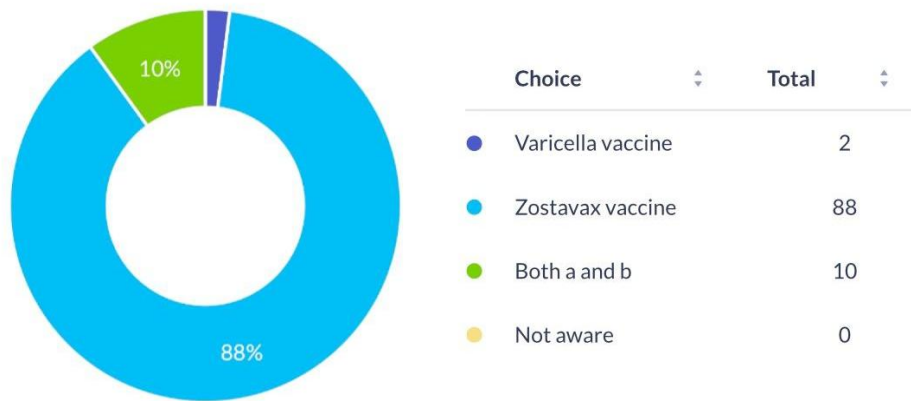
**Figure 5 : Pie chart depicts the practitioners response for the question whether they are aware of risk factors of herpetic neuritis[older age groups(purple), severe herpes zoster rashes(blue), burning pain(green)]. All of the above was the response given by all the respondents and no one has responded not aware(orange).**



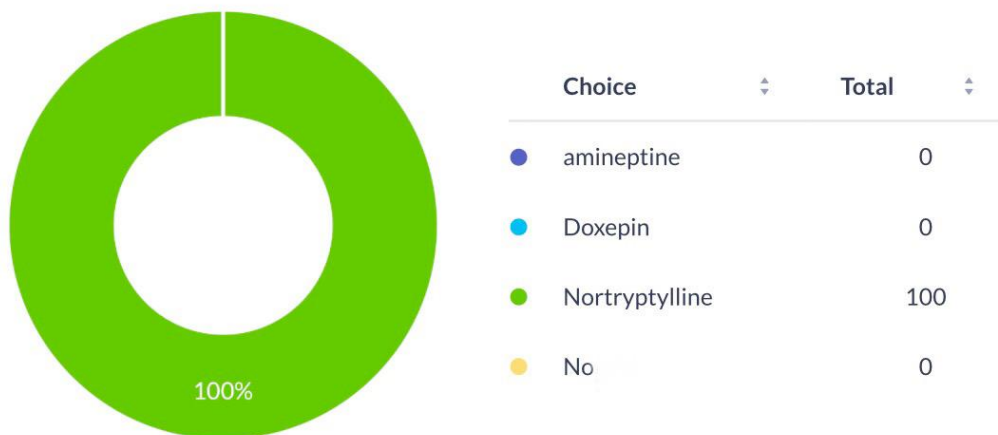
**Figure 6 :** Pie chart depicts the practitioners response for the question whether they are aware of the most important diagnostic method used in case of herpetic neuritis[laboratory studies(purple),MRI(blue), all of the above(green)]. All the respondents had said that MRI is considered to be the important diagnostic method and no one has responded not aware(yellow).



**Figure 7 :** Pie chart depicts the practitioners response for the question whether they are aware of the primary prevention done in case of herpetic neuritis patients. 91% of them has responded varicella vaccine(purple), 1% had responded to the zostavax vaccine(blue), 8% of them had responded that both zostavax and varicella vaccines are used (green) and no one has responded for none of the above(yellow).

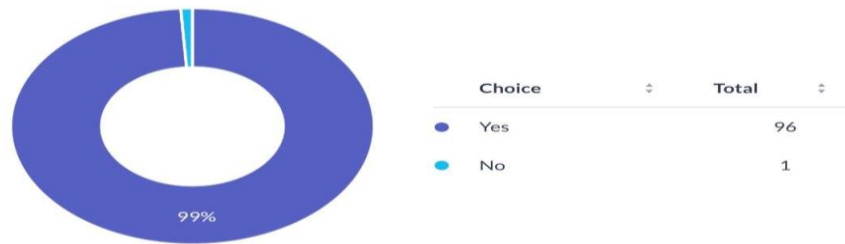


**Figure 8 :** Pie chart depicts the practitioners response for the question whether they are aware of the primary prevention done in case of herpetic neuritis patients. 2% of them has responded varicella vaccine(purple), 88% had responded to the zostavax vaccine(blue), 10% of them had responded that both zostavax and varicella vaccines are used (green) and no one has responded for not being aware (yellow).



**Figure 9 :** Pie chart depicts the practitioners response for the question whether they are aware of the tricyclic antidepressants[amineptine(purple),doxepin(blue),nortriptylline(green)] which are effective in reduction of pain caused by herpetic neuritis. All the respondents had said nortriptylline and no one had responded for not being aware (yellow).





**Figure 10 : Pie chart depicts the practitioners response for the question that do they think awareness of herpetic neuritis is important.99% of respondents have said yes (purple) and 1 % of them said no (blue).**

### CONCLUSION

From the above results , we conclude that the awareness among dental practitioners about herpetic neuritis is adequate and a few of them had negative attitude towards the practices of the awareness and management practices.Organising seminars and additional classes about herpetic neuritis and its management protocol may help to gain more knowledge about the disease and that would change their attitude.This can also have an impact on the patients psychological health and positive influence in their access to dental students and to maintain good hygiene and nutrition and to prevent such diseases.

### ACKNOWLEDGEMENTS

The study was supported by Saveetha Dental College and Hospitals, Saveetha Institute Of Medical and Technical Sciences, Saveetha University, Chennai.

### CONFLICTS OF INTEREST

There were no conflicts of interest as declared by the authors.

### REFERENCES

1. Arani, R.B. et al. (2001) 'Phase specific analysis of herpes zoster associated pain data: a new statistical approach', *Statistics in Medicine*, pp. 2429-2439. doi:10.1002/sim.851.
2. Arvin, A. (2005) 'Aging, Immunity, and the Varicella-Zoster Virus', *New England Journal of Medicine*, pp. 2266-2267. doi:10.1056/nejmp058091.
3. Ashok, V. and Ganapathy, D. (2019) 'A geometrical method to classify face forms', *Journal of oral biology and craniofacial research*, 9(3), pp. 232-235.
4. Betts, R.F. (2007) 'Vaccination strategies for the prevention of herpes zoster and postherpetic neuralgia', *Journal of the American Academy of Dermatology*, pp. S143-S147. doi:10.1016/j.jaad.2007.09.017.
5. Chernev, I. and Dado, D. (2013) 'Segmental zoster abdominal paresis (zoster pseudohernia): a review of the literature', *PM & R: the journal of injury, function, and rehabilitation*, 5(9), pp. 786-790.
6. Choudhari, S. and Thenmozhi, M.S. (2016) 'Occurrence and Importance of Posterior Condylar Foramen', *Journal of advanced pharmaceutical technology & research*, 9(8), p. 1083.
7. Coen, P.G. et al. (2006) 'Predicting and preventing post-herpetic neuralgia: are current risk factors useful in clinical practice?', *European journal of pain*, 10(8), pp. 695-700.
8. Gauthier, A. et al. (2009) 'Epidemiology and cost of herpes zoster and post-herpetic neuralgia in the United Kingdom', *Epidemiology and infection*, 137(1), pp. 38-47.
9. Govindaraju, L., Jeevanandan, G. and Subramanian, E. (2017) 'Clinical Evaluation of Quality of Obturation and Instrumentation Time using Two Modified Rotary File Systems with Manual Instrumentation in Primary Teeth', *Journal of clinical and diagnostic research: JCDR*, 11(9), pp. ZC55-ZC58.
10. Gupta, P., Ariga, P. and Deogade, S.C. (2018) 'Effect of Monopoly-coating Agent on the Surface Roughness of a Tissue Conditioner Subjected to Cleansing and Disinfection: A Contact Profilometric Study', *Contemporary clinical dentistry*, 9(Suppl 1), pp. S122-S126.

11. Hannah, R. et al. (2018) 'Awareness about the use, ethics and scope of dental photography among undergraduate dental students dentist behind the lens', *Journal of advanced pharmaceutical technology & research*, 11(3), p. 1012.
12. Hempenstall, K. et al. (2005) 'Analgesic Therapy in Postherpetic Neuralgia: A Quantitative Systematic Review', *PLoS Medicine*, p. e164. doi:10.1371/journal.pmed.0020164.
13. Jeon, Y.H. (2015) 'Herpes Zoster and Postherpetic Neuralgia: Practical Consideration for Prevention and Treatment', *The Korean journal of pain*, 28(3), pp. 177-184.
14. Johnson, R.W. (2010) 'Herpes zoster and postherpetic neuralgia', *Expert Review of Vaccines*, pp. 21-26. doi:10.1586/erv.10.30.
15. Jung, B.F. et al. (2004) 'Risk factors for postherpetic neuralgia in patients with herpes zoster', *Neurology*, pp. 1545-1551. doi:10.1212/01.wnl.0000123261.00004.29.
16. Kavarthapu, A. and Thamaraiselvan, M. (2018) 'Assessing the variation in course and position of inferior alveolar nerve among south Indian population: A cone beam computed tomographic study', *Indian journal of dental research: official publication of Indian Society for Dental Research*, 29(4), pp. 405-409.
17. Nalamachu, S. and Morley-Forster, P. (2012) 'Diagnosing and Managing Postherpetic Neuralgia', *Drugs & Aging*, pp. 863-869. doi:10.1007/s40266-012-0014-3.
18. Oxman, M.N. et al. (2005) 'A Vaccine to Prevent Herpes Zoster and Postherpetic Neuralgia in Older Adults', *New England Journal of Medicine*, pp. 2271-2284. doi:10.1056/nejmoa051016.
19. Pandian, K.S., Krishnan, S. and Kumar, S.A. (2018) 'Angular photogrammetric analysis of the soft-tissue facial profile of Indian adults', *Indian journal of dental research: official publication of Indian Society for Dental Research*, 29(2), pp. 137-143.
20. Ramamurthy, J. and Mg, V. (2018) 'Comparison of effect of Hiora mouthwash versus Chlorhexidine mouthwash in gingivitis patients: A clinical trial', *Asian journal of pharmaceutical and clinical research*, 11(7), p. 84.
21. Ramesh, A. et al. (2019) 'Esthetic lip repositioning: A cosmetic approach for correction of gummy smile - A case series', *Journal of Indian Society of Periodontology*, 23(3), pp. 290-294.
22. Ravi, S. et al. (2017) 'Additive Effect of Plasma Rich in Growth Factors With Guided Tissue Regeneration in Treatment of Intrabony Defects in Patients With Chronic Periodontitis: A Split-Mouth Randomized Controlled Clinical Trial', *Journal of Periodontology*, pp. 839-845. doi:10.1902/jop.2017.160824.
23. Sampathkumar, P., Drage, L.A. and Martin, D.P. (2009) 'Herpes Zoster (Shingles) and Postherpetic Neuralgia', *Mayo Clinic Proceedings*, pp. 274-280. doi:10.4065/84.3.274.
24. Samuel, S.R., Acharya, S. and Rao, J.C. (2020) 'School Interventions-based Prevention of Early-Childhood Caries among 3-5-year-old children from very low socioeconomic status: Two-year randomized trial', *Journal of public health dentistry*, 80(1), pp. 51-60.
25. Sharma, P. et al. (2019) 'Emerging trends in the novel drug delivery approaches for the treatment of lung cancer', *Chemico-biological interactions*, 309, p. 108720.
26. Khulafiyah, Widiati, U., Anugerahwati, M., Suryati, N. Autonomous Learning Activities: The Perceptions of English Language Students in Indonesia(2021) *Pegem Egitim ve Ogretim Dergisi*, 11 (3), pp. 34-49. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85111368365&partnerID=40&md5=05041406e7a44f94933c2c48c47b9c2a>
27. Venu, H., Raju, V.D. and Subramani, L. (2019) 'Combined effect of influence of nano additives, combustion chamber geometry and injection timing in a DI diesel engine fuelled with ternary (diesel-biodiesel-ethanol) blends', *Energy*, 174, pp. 386-406.
28. Vikram, N.R. et al. (2017) 'Ball Headed Mini Implant', *Journal of clinical and diagnostic research: JCDR*, 11(1), pp. ZL02-ZL03.
29. Volpi, A. et al. (2008) 'Clinical and psychosocial correlates of post-herpetic neuralgia', *Journal of medical virology*, 80(9), pp. 1646-1652.
30. Watson, C.P.N. and Gershon, A.A. (2001) *Herpes Zoster and Postherpetic Neuralgia*. Elsevier Science Health Science Division.
31. Wu, F. et al. (2019) 'Biologically synthesized green gold nanoparticles from Siberian ginseng induce growth-inhibitory effect on melanoma cells (B16)', *Artificial Cells, Nanomedicine, and Biotechnology*, pp. 3297-3305. doi:10.1080/21691401.2019.1647224.